

DRID #48 and XML

Donald Hall

Supply Chain Team Chief

Joint Electronic Commerce Program
Office

June 21, 2000

Data Standards Dilemma

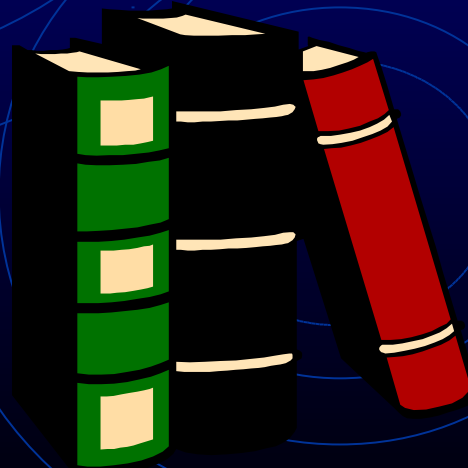
- Current data standards
 - Multiple
 - Inconsistent
 - Overlapping
- No common data dictionary
- No common data naming convention
- No recognized semantic harmonization framework

Interoperability Drives Revolutionary Change



XML Technical Specifications

- **Are developed by the World Wide Web Consortium (W3C)**
- **Issued as W3C recommendations**
- **Not submitted to accredited standards bodies**



XML Technical Specifications

- **Approved Recommendations**
 - **XML 1.0**
 - **Document Object Model Level 1**
 - **Namespaces in XML**
 - **Associating Style sheets with XML documents**
 - **XSL Transformations**
 - **Xpath**
 - **XHTML**
- **Proposed Recommendations**
 - **Resource Description Framework (RDF) Schemas**
- **Candidate Recommendations**
 - **Document Object Model Level 2**

XML Technical Specifications

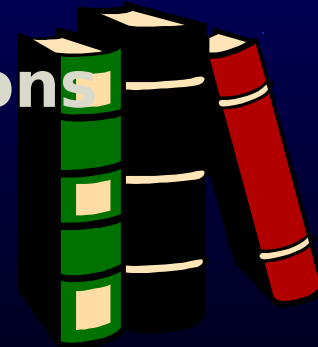
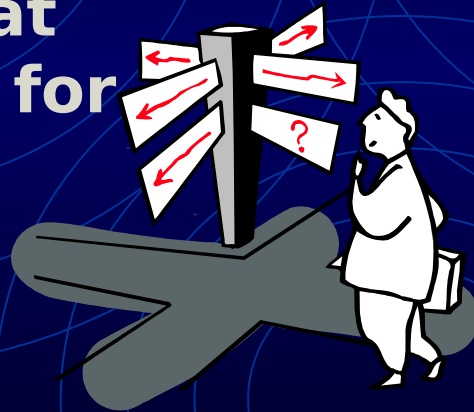
- **Working Drafts**
 - **XML Signature Syntax and Processing**
 - **XML Linking Language**
 - **XML Information Set**
 - **XML Schema Part 1: Structures**
 - **XML Schema Part 2: Data Types**
 - **Exentsible Stylesheet Language**
 - **Various XHTML related proposals**
 - **Many others**

The Extensible Markup Language Is -

A subset of the Standard Generalized Markup Language (ISO Std 8879)

A series of related technical specifications that provide a syntax for identifying, exchanging and distributing data

A method for incorporating information modeling in web applications

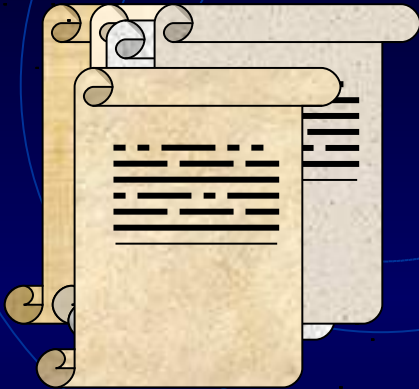


**ANSI X.12
Transaction 810
4020 Release
Invoice**
Data Element
Invoice Number
Transaction Code
Amount
Date
Date due
Continuation

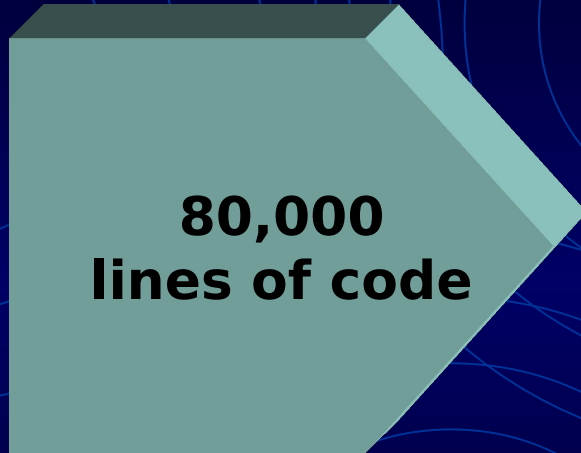
A method for creating web based distributed environments for internal and

Why People Are Excited By XML

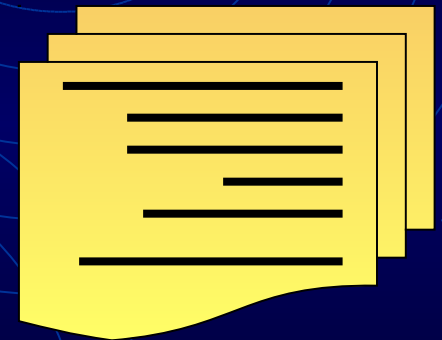
**Message
Text Format**



**80,000
lines of code**

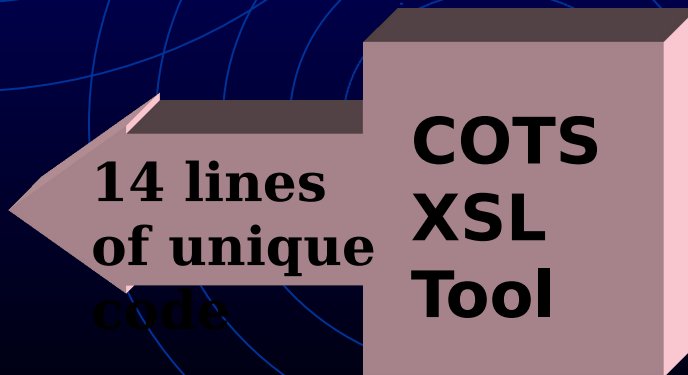


XML

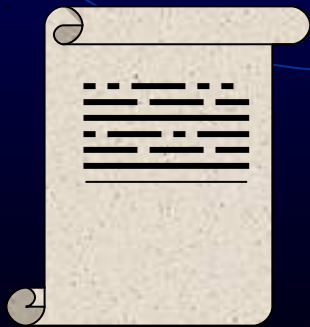


With DTD Extended

**14 lines
of unique
code**

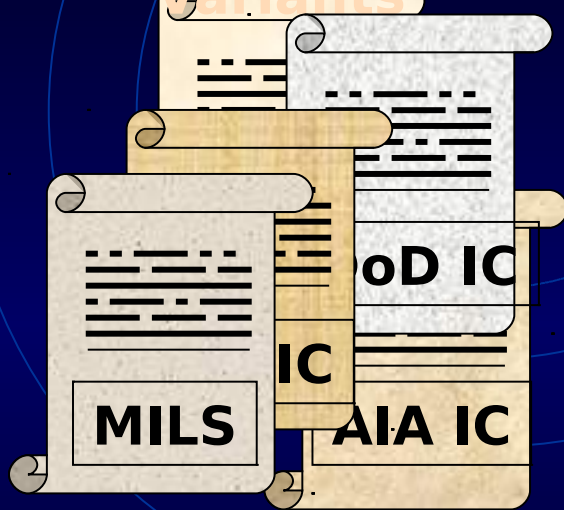


**COTS
XSL
Tool**



An Application Of XML

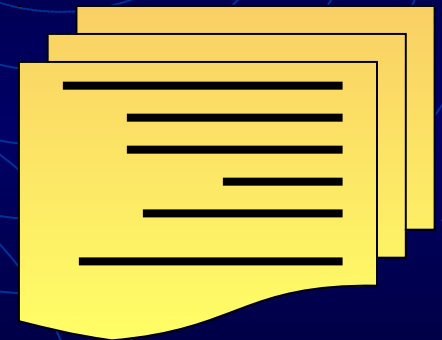
Multiple
EDI
Variants



EDI to XML

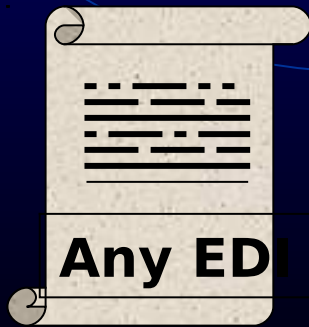


XML



Semantic Models

Any EDI



XML to
EDI

COTS
XSL
Tool



Integrating Business Knowledge

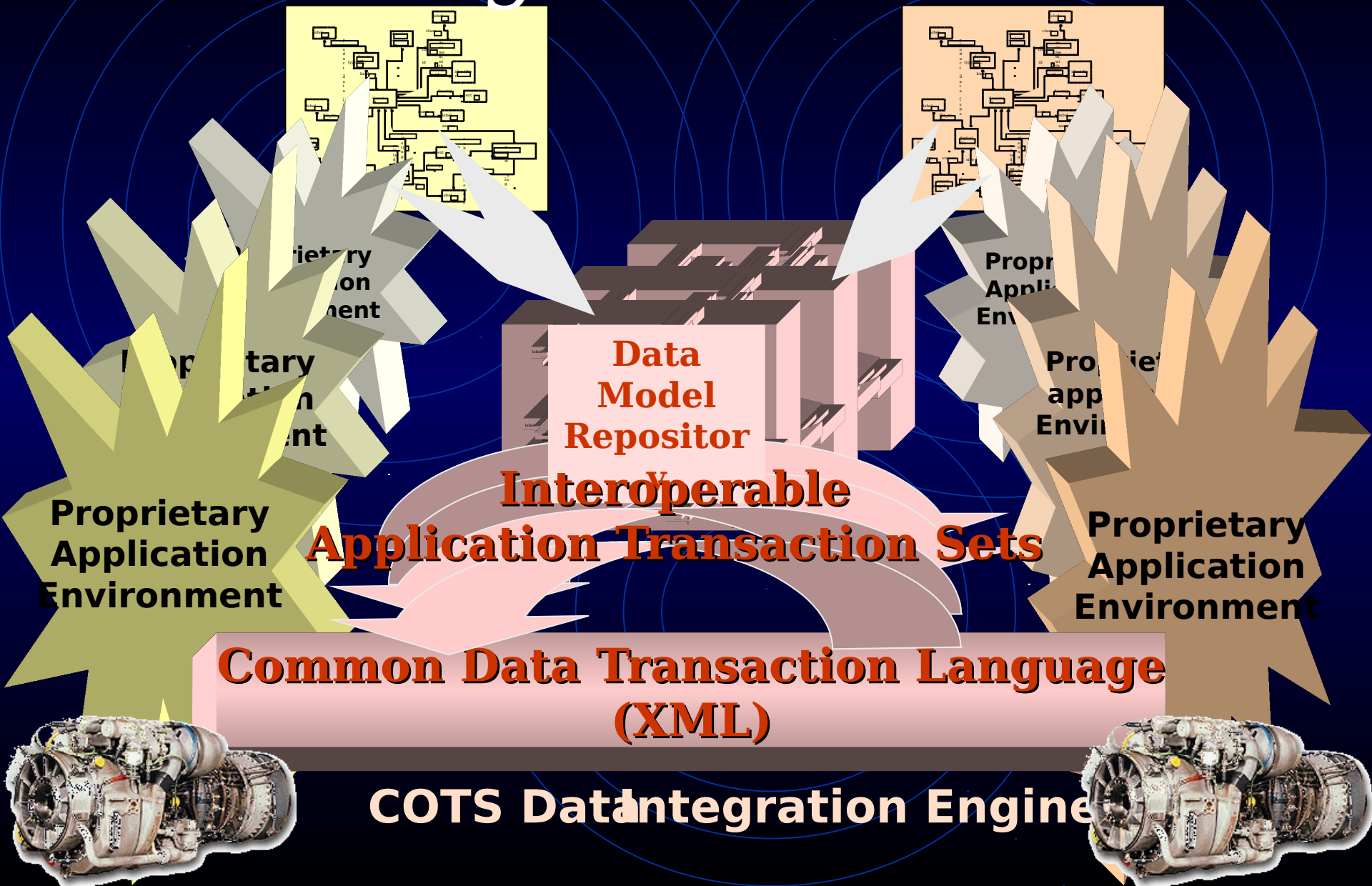
Syntax + Semantics Methods

Traditional EDI <ul style="list-style-type: none"> • ISO 9735 • X12.6,x 	<ul style="list-style-type: none"> • ICs • DED 	<ul style="list-style-type: none"> • Mapper / Translator
Web EC <ul style="list-style-type: none"> • XML 	<ul style="list-style-type: none"> • Schemas • RDF • Repository • Namespaces 	<ul style="list-style-type: none"> • XSLT, DOM, Links, • JDBC, Agents, Middleware, etc. • SOAP • WIDL • APIs

=

Shared Business Knowledge

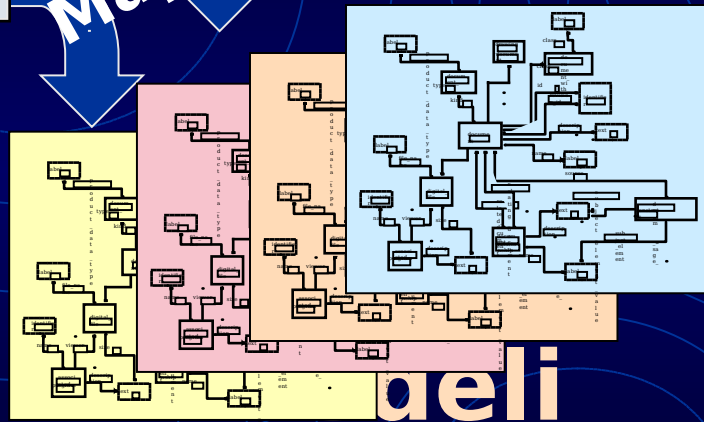
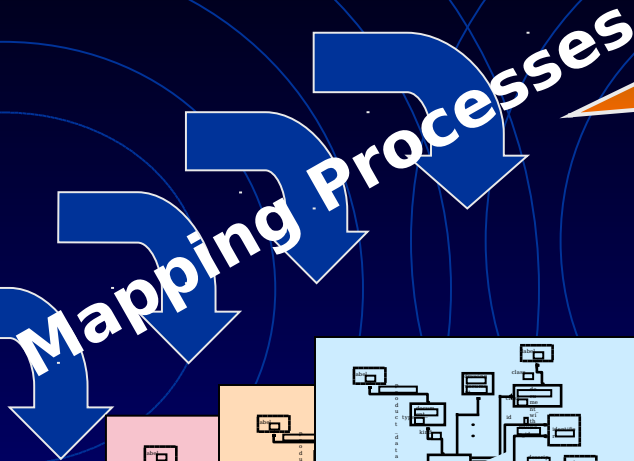
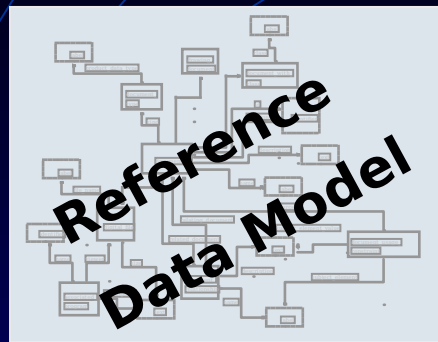
Working the Framework



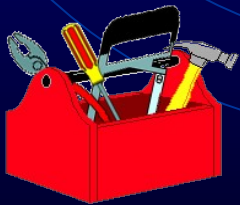
Tradeoffs Among Five Popular EB Interoperability Methods

	XML FRAMEWORK	XML DTD	EDI (incl XML spin offs)	DATA MEDIATOR	COMMA DELIMITED FILES
SEMANTIC VISIBILITY	Explicit Integrated Available	Explicit Available	Implicit	Hidden	Buried
IMPACT OF CHANGES	Local, need to write new schema	Extended need to integrate change	Extensive, need to modify the standard	Massive, need to rewrite data tables	Forget it
IMPACT OF SCALING	Near linear	Moderately exponential	Highly exponential	Moderately exponential	You're kidding of course

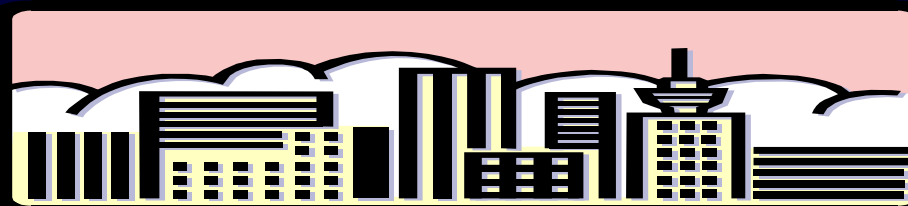
X Framework Elements



Registry - Repository



COTS Tools



Messaging Infrastructure

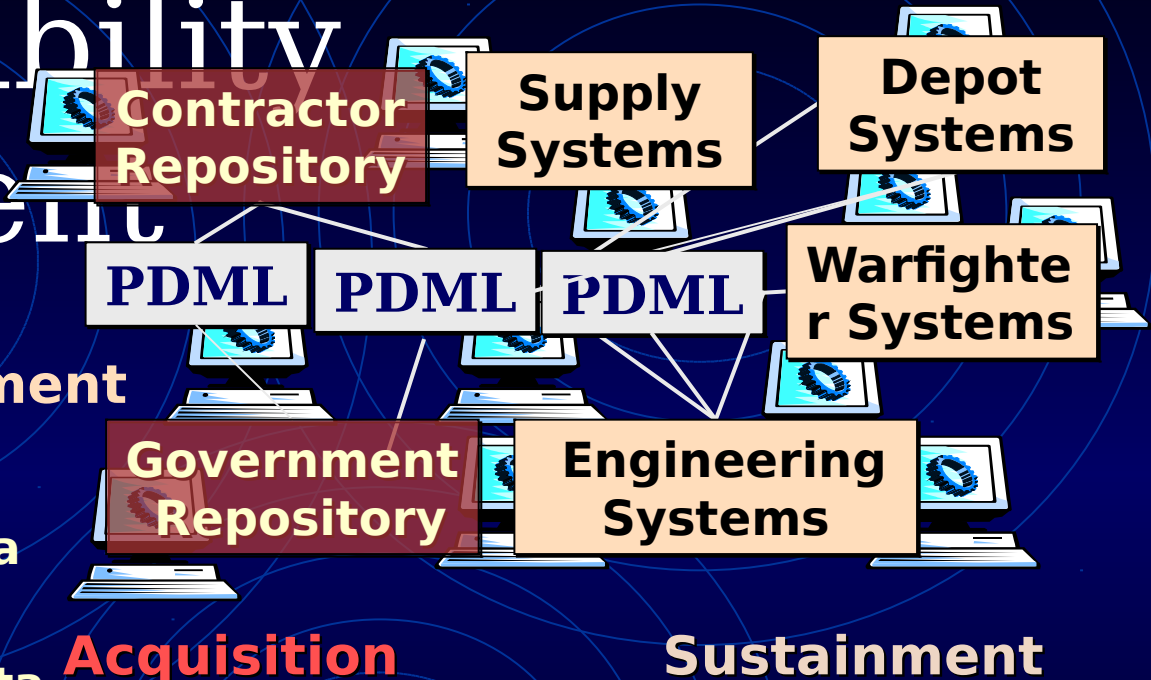
if-describing, WEB based language family; XML, XSL, XQL, e

Product Data Interoperability Requirements

Product Data Management Interoperability Goals

- transact product data
- locate product data
- reference product data
- relocate product data
- maintain copies of product data ...

an open network environment



PDMF Approach

Focus on product data management metadata

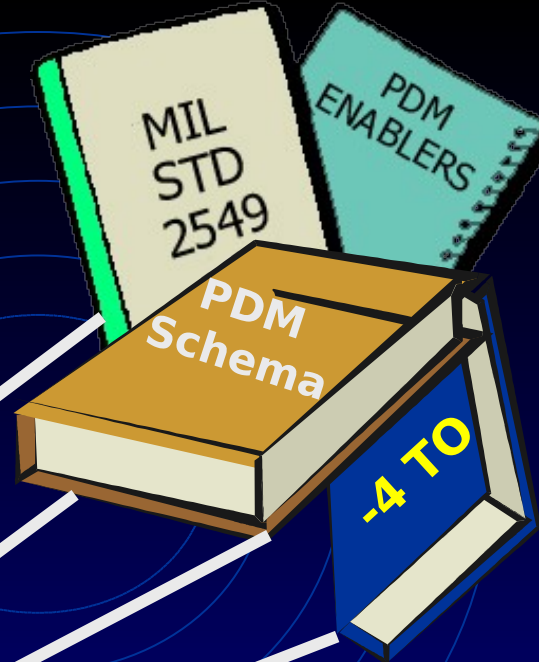
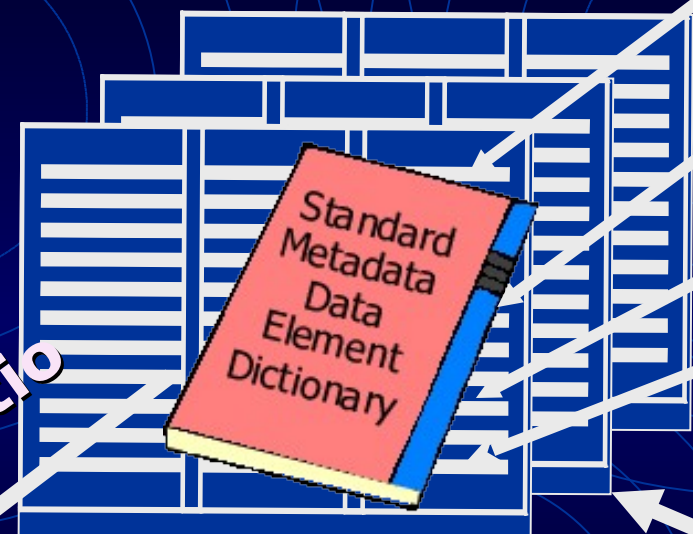
Interoperable Application Transaction Sets

Written in XML

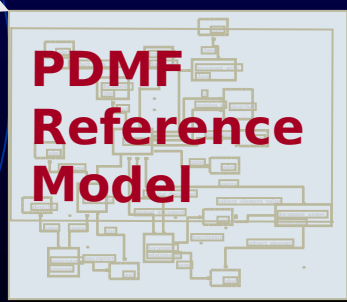
```
XML ATS
< Document >
< Product_ID >
< Product_Name >
< NH_Product_ID >
XML ATS
< Product_Structure >
< Product_ID >
< Product_Name >
< NH_Product_ID >
XML ATS
< MS 2549, DIP1 >
< Product_ID >
< Product_Name >
< NH_Product_ID >
XML ATS
< JEDMICS >
< Product_ID >
< Product_Name >
< NH_Product_ID >
```

Translation

Information model (schema) written for each transaction type



Source libraries

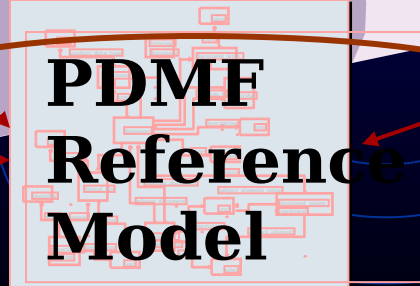
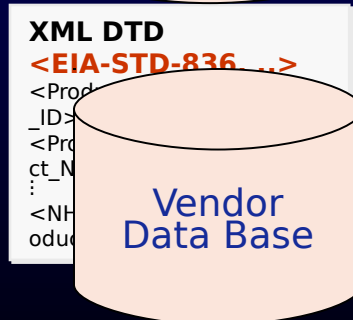
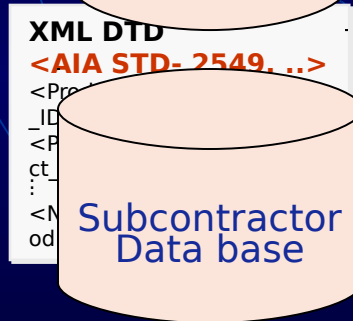
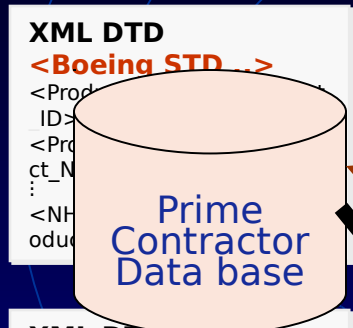


Paperless Product Data Solution

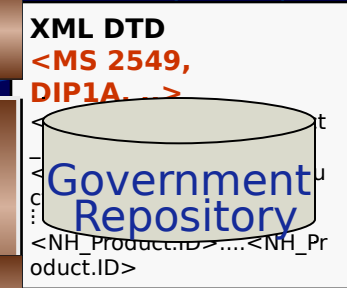
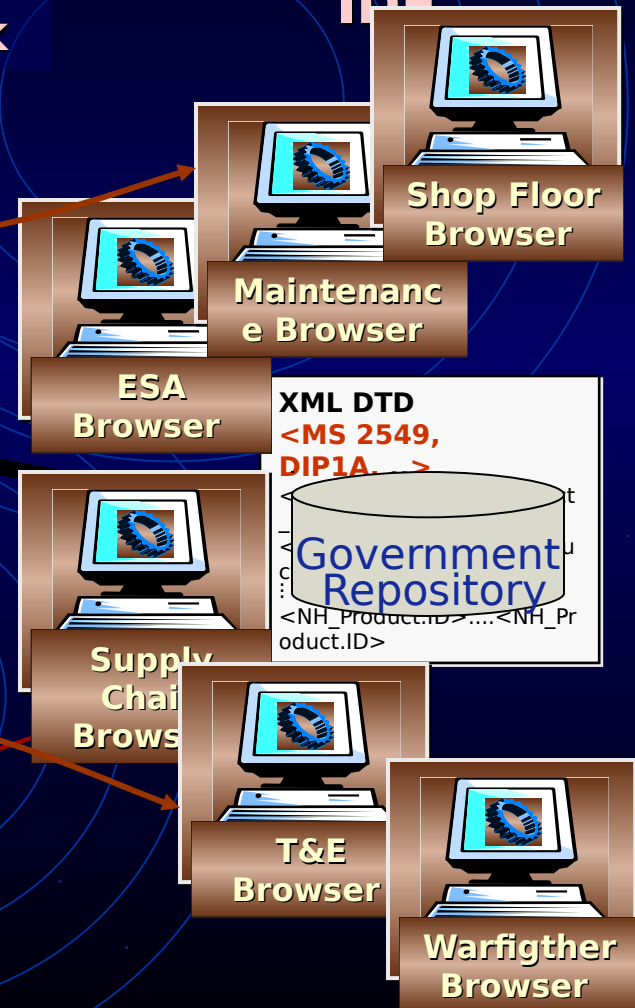
Industry IDEs

Government IDE

Shared Global Network



Registry/Repository



EDI and XML

- **Good news**

- XML Framework methodology emerging as an industry best practice
- Widespread industry interest
- Tools generally available
- Specifications solidifying
- Potential to reduce integration costs
- Potential to bridge traditional standards disconnects
- Inherent flexibility & extensibility are huge incentives
- Lots of industry interest

- **Bad news**

- Status of EDI data dictionary
- Standards vice framework orientation in EDI
- Lack of consistent definition set for the framework and its elements
- Many approaches to implementation - not all of them good
- Much interest in doing something NOW; less interest in building the framework
- Little industry direction

DRID #48 XML Options

- **XML as an intermediate form**
 - **EDI across the net**
 - **XML schema as EDI to EDI translator**
 - **Requires schema and EDI to XML API for each transaction**
- **Exchange XML maps of EDI transactions**
 - **Translate all EDI transactions to one for one XML equivalents**
 - **Would allow more “hands free” translation**
 - **Requires schema for each transaction**
- **Exchange pure XML**
 - **Transaction will contain its own schema**

In any case need to convert EDI data dictionary into XML

XML and Business Rules

- **Less industry progress in business rules vice data integration**
 - **Workflow management coalition**
 - **Some rules embedded in MS BizTalk**
- **XML encoded business rules available at dlms.mil might enhance degree of compliance**
- **Framework approach might be applicable to allow controlled flexibility**

XML Bottom Line

➤ XML has limited utility as a new data transaction format

➤ XML has great utility as a tool for enhancing the performance of existing

formats ✓ Access to transaction data content models

✓ Modeling of business rules

✓ Facilitation of legacy system/data integrat

➤ XML standardization efforts should focus on development of overall framework not individual transactions or elements

